

CLAIMS

What is claimed is:

- 5 1. A method for indicating defect locations on a composite structure,
the method comprising:
 electronically accessing positional data defining a defect location on
a composite structure; and
 automatically causing a light source to direct light at the composite
structure to indicate the defect location as defined by the positional data.
10
2. The method of claim 1, wherein the electronically accessing
includes extracting the positional data from a part fabrication file, the part
fabrication file including numerical control (NC) data for a material placement
machine to fabricate the composite structure.
15
3. The method of claim 2, wherein the electronically accessing
includes receiving a signal indicating detection of a defect by an inspection
system inspecting the composite structure for defects, and extracting the
positional data from the part fabrication file in response to the received signal.
20
4. The method of claim 3, wherein:
 the electronically accessing includes, upon completion of a ply of
the composite structure by the material placement machine, accessing the
extracted positional data defining defect locations on the completed ply;
25 and
 the automatically causing including automatically causing the light
source to direct light at the completed ply to indicate the defect locations
on the completed ply.
- 30 5. The method of claim 1, wherein the automatically causing includes
creating a program to automatically generate instructions, in connection with the
positional data, for automatically causing the light source to direct light at the
composite structure to indicate the defect location.

6. The method of claim 1, wherein the automatically causing includes, upon completion of a ply of the composite structure by a material placement machine, automatically causing the light source to direct light at the completed ply of the composite structure to indicate the defect locations on the completed
5 ply.

7. The method of claim 1, wherein the automatically causing includes automatically causing the light source to direct light at the defect location to illuminate the defect location.
10

8. The method of claim 1, wherein the light source comprises a laser.

9. The method of claim 8, wherein the automatically causing includes automatically splitting the light emitted by the laser to indicate a plurality of defect
15 locations on the composite structure.

10. The method of claim 1, wherein the automatically causing includes using light to indicate and distinguish among one or more different types of defects.
20

11. The method of claim 1, wherein the automatically causing includes using light to indicate and distinguish among one or more different categories of acceptance criteria for defects.

12. The method of claim 1, wherein the automatically causing includes having the light source direct light at composite structure to indicate the defect location at least until the defect at the defect location is repaired.
25

13. The method of claim 1, further comprising determining whether a
30 defect is unacceptable, and wherein the automatically causing includes having the light source direct light at the composite structure to indicate only defect locations of defects determined to be unacceptable.

14. The method of claim 1, wherein the automatically causing includes indicating one or more defect locations within a region on the composite structure by having the light source direct light to indicate the region.

15. A system for indicating defect locations on a composite structure, the system comprising:

at least one light source;

a controller associated with the light source to control operation of

5 the light source;

a program executable by the controller, the program including:

a computer executable module for electronically accessing positional data defining a defect location on a composite structure; and

10 a computer executable module for automatically generating instructions for automatically causing the controller to operate the light source such that the light source directs light at the composite structure to indicate the defect location as defined by the positional data.

15

16. The system of claim 15, further comprising a computer executable module for extracting the positional data from a part fabrication file including numerical control (NC) data for a material placement machine to fabricate the composite structure.

20

17. The system of claim 16, further comprising a computer executable module for receiving a signal indicating detection of a defect by an inspection system inspecting the composite structure for defects, and wherein the positional data is extracted from the part fabrication file in response to the received signal.

25

18. The system of claim 17, further comprising:

a computer executable module for accessing, upon completion of a ply of the composite structure by the material placement machine, the extracted positional data defining defect locations on the completed ply; and

30

wherein the controller operates the light source such that the light source directs light at the completed ply to indicate the defect locations on the completed ply.

19. The system of claim 15, wherein the controller operates the light source, upon completion of a ply of the composite structure by a material placement machine, such that the light source directs light at the completed ply to indicate the defect locations on the completed ply.

5

20. The system of claim 15, wherein the light source comprises a laser.

21. The system of claim 20, further comprising a light-splitting device to split the light emitted by the laser to indicate a plurality of defect locations on the composite structure.

10

22. The system of claim 15, wherein the program includes a computer executable module for communicating with an inspection system inspecting the composite structure for defects.

15

23. The system of claim 15, wherein the program includes a computer executable module for communicating with a material placement machine fabricating the composite structure.

24. A program comprising:

a computer executable module for electronically accessing positional data defining a defect location on a composite structure; and

a computer executable module for automatically generating instructions for automatically causing a light source to direct light at the composite structure to indicate the defect location as defined by the positional data.

25. The program of claim 24, further comprising a computer executable module for extracting the positional data from a part fabrication file, the part fabrication file including numerical control (NC) data for a material placement machine to fabricate the composite structure.

26. The program of claim 25, further comprising a computer executable module for receiving a signal indicating detection of a defect by an inspection system inspecting the composite structure for defects, and wherein the positional data is extracted from the part fabrication file in response to the received signal.

27. The program of claim 26, further comprising a computer executable module for accessing, upon completion of a ply of the composite structure by the material placement machine, the extracted positional data defining defect locations on the completed ply, and wherein the instructions automatically cause the light source to direct light at the completed ply to indicate the defect locations on the completed ply.

28. The program of claim 24, further comprising a computer executable module for communicating with an inspection system capable of inspecting the composite structure.

29. The program of claim 24, further comprising a computer executable module for communicating with a material placement machine fabricating the composite structure.